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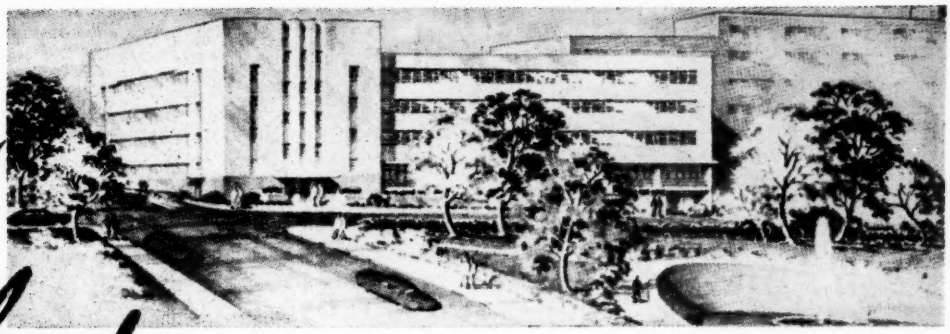

Atlanta ECONOMIC REVIEW

Prepared monthly as a service to Atlanta Citizens by the Council on Economic Research, Atlanta Division, University of Georgia

Vol. III, No. III Atlanta, Georgia March, 1953

Transportation – A Vital Factor in Modern Civilization

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According to phychologists and anthropologists, human beings all over the world desire prestige and status in the groups to which they belong. Some individuals obtain such prestige by the number of heads they have shrunk, while others are respected if they have a large number of rings on their necks. In the place called the United States, however, one reason for prestige accruing to individuals is that they carry on work necessary to the material well-being of the country. Medical doctors, scientists, businessmen, steel workers, and farmers all are thought to carry on particularly important work. The objective of this discussion is to demonstrate that the people and investment of Transportation are vital to the welfare of the nation.[1] My thesis, in substance, is the following: railroad engineers, rate clerks, truck drivers, flight engineers, section gangs, trolley bus operators, and others associated with any form of transport are important persons. Twentieth-century United States could not get along without them or the facilities with which they labor.

The forms of transportation which societies possess help shape their outlook, development, and problems. An observer in 1838, only a decade after the beginning of railroads, made these striking remarks concerning their influence:

> By means of Railways, institutions and customs, laws and language will make rapid progress in assimilation, over every part of the United Kingdom, and the world at large. Newspapers and periodicals, pamphlets, and small volumes, containing the seeds of improvement, civil, scientific, moral and religious, will be dispersed with tenfold rapidity. Orators, Lecturers, and Missionaries will be multiplied — Villages and small towns will gradually exchange their dialect for the national tongue, by the increased frequency of communication with other places and persons; and customs and superstition that have for ages resisted the progress of other agents, will give way to the force and rapidity of this.[2]

While this may be an exaggerated picture of the effects of railways, surely the broad outlines of the prophecy have come to pass.

This can be seen from a comparison of the United States with China — one country having enjoyed extraordinary transportation development and the other until recently using centuries-old hauling techniques. Railroads, highways, water systems, pipelines, and airways join the United States into a national culture, market, and into a remarkably powerful production machine. While in China, until lately, human beings and river junks were perhaps the most important means of hauling goods. Porters, carrying up to 300 pounds of goods on their backs, performed much of the land transportation. A brief perusal of the Chinese society likewise shows something far different from the United States. Local dialects prevailed, to the extent that individuals traveling from one part of the country to another had difficulty in understanding the "languages" of their fellow citizens. The vast majority of the people lived and died within the narrow confines of village life. Trade was an important occupation only in the coastal cities. Even though most of the Chinese engaged in farming, famine often prevailed; for without low-cost, modern transportation to haul supplies to points of need, the peo-

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[1] This does not suggest that other activities are thereby subsidiary and inferior to the role of transportation, for in an industrial economy there are many key functions. In this paper the character of transportation is being emphasized.

[2] Edward Cornelius Osborne, *Osborne's Guide to the Grand Junction* (secondary title: *Birmingham, Liverpool and Manchester Railroad*), Birmingham, England, 1838.

ple starved. Not all of the relatively material backwardness of China can be explained by an absence of railroads or paved highways, but these obviously have been important factors.

The significance of transport can be seen further by examining the relationships between the development of American transportation and the socio-economic evolution of the nation. Until about 1815 inland hauling was by packtrains and wagons over turnpikes, trails, and what roads there might be. In Texas, for example, the roads were laid out simply by marking routes with stakes, the wagon ruts of following vehicles forming the roads. In many instances these forbears of modern highways were difficult to traverse, if we take the word of travelers of the time.

Not only was arduousness of land travel a deterrent against industrial development of the country, but the length of time required to move from one place to another fostered a self-sufficient and local economic life. Illustrating the technological backwardness of transportation during the early 1800's, in 1816 it took a horse-drawn coach about one hundred hours to travel the 475 miles between New York and Buffalo; and in 1819 it required 85 hours to make the distance of 560 miles between Virginia and upper New York. Haulage of goods, however, necessitated more time, for during the summers it required about 26 days to take a wagon train from Boston to Baltimore, and about 50 days to haul a wagon load of goods from New York to Augusta, Georgia.[3] With transport techniques such as these the United States was doomed to be a divisive cluster of states, with manufacture, unity, and industrial power things of the future. The country of 1800 resembled China more than the nation it was to become.

A revolution in the transportation of goods and people occurred, however, with the coming and widespread use of the railroad, eliminating in great measure the delays, physical hardships, and excessive cost of land transportation by wagon or ox cart. Throughout the post Civil-War period a railroad network of steel bands steadily encompassed the nation, joining it together into an integrated and unified economy. In 1850, twenty years after the coming of rail carriers, nine thousand miles of track connected some of the important business centers, but by 1900 a veritable web of rails, totaling nearly 200 thousand miles, had been laid throughout the country.[4] Improvements in equipment such as airbrakes, block signal systems, refrigerated cars, and powerful locomotives, added to the abilities of railroad systems to carry increasing volumes of freight and passengers.

What occurred in the latter half of the nineteenth century, thus, was a transformation from a self-sufficient agrarian society, where most of the goods were produced at home, to an interdependent civilization oriented around the factory or the machine. Industrial wage earners and "captains of industry" supplanted farmers or small merchants as the most typical men of society. And, the rise and spread of rapid, mass transportation gave powerful impetus to this "Great Change." With the aid of modern transport, farming with crude tools and production at home or in workshops became relics of a bygone era, with mechanical reapers and open hearth furnaces characterizing the technology of a new twentieth-century environment.

To show further the impact of transportation upon the problems and ideas of the American society, it is but necessary to examine the role of that form of transport most familiar to all of us — the family automobile. In but a few decades the auto has provoked the rise of a host of political and social dilemmas. The rapid shift of people from living areas relatively close to the centers of towns to the wide-open spaces of suburbs, which has come about almost solely because of automobiles and similar vehicles, has made acute the financial perplexities of municipalities. City services such as water, sewerage, recreation, and police protection must be expanded to greatly increased areas, but new tax revenues often are not sufficient to cover the costs.

And, what have autos done, or threaten to do, to the long-run growth of many down-town mercantile centers! Parking-space shortages and streets clogged with cars may result in financial declines of down-town establishments. The growth of complete shopping centers on the peripheries of many major American cities are real threats to their heartlands. Thus we hear increased discussion about government intervention to facilitate the traffic flow of autos and to help provide parking areas—changes in the "free enterprise" character of our economic order all because of automobiles!

Carrying the discussion into the social realm, autos have helped create a veritable revolution in patterns of courting in America. Greater freedom from parental supervision and more informal relationships between parents and children surely have been some of the consequences of the use of automobiles. Traditional modes of behavior, such as chaperonage, have nearly disappeared. The railroad, auto, and airplane likewise have helped alter the provincial and regional outlooks of many citizens. An editorial writer for the *Washington Post* recently stated:

> More than half the population, it is estimated, has been going places this summer, rubbing off its regional corners at motel and tourist shrine — thus regional divisions in this country fade a little more. The 25 percent of the population that moved this year had helped the fading along — The ownership of automobiles by 45 million families, and the development of television, radio, and other mass media have helped break down the idea that "we-uns" are better than "you-uns" on the other side of the State line.[5]

This may be a somewhat optimistic view, but surely the process described here has received impetus and force from increased mobility given the population. Less than one hundred years ago, for example, the peoples of the United States fought one of the most bloody and costly Civil Wars in history. Yet today the offspring of those individuals work, fight, and vacation together.

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[3] Caroline E. MacGill and others, *History of Transportation in the United States Before 1860*, p. 594. *Historical Statistics of the United States, 1789-1945*, U. S. Department of Commerce, Bureau of the Census, 1949, pp. 201-202.

[5] *Washington Post*, Washington, D. C., September 4, 1952.

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The tendency toward breakdown of regional bias and provincialism has been so extensive that today when people of one region are transferred to another, they are met not with rifle fire, but with welcoming committees and parties.[6] Autos, locomotives, trucks, and airplanes have fostered this corrosion of concepts and prejudices, for they have made the nation more compact and small, in terms of time.

Shifting to another facet of the problem at hand, transportation men and facilities, by helping to expand the availability of resources, enlarge the "wealth of the nation." Resources, a much abused and misused concept, includes not only substances from nature but also wants, skills, and knowledge from human beings, and tools, instruments, and machines from culture. Interaction of all these factors is necessary to produce ability to be useful or to satisfy wants. [7] Coal below the surface of the earth is not a resource until man possesses the knowledge of digging tunnels, tools to evacuate the coal, the means of bringing it to the surface, and transportation facilities to carry it to consumers.

In the jungles of South America it is estimated that there are vast supplies of iron ore, coal, copper, and other "natural resources." Actually such substances are not resources, cannot satisfy wants and needs, pending construction of modern transportation lines and arrival of machinery and technicians at the mine sites. While transportation is not the sole agent in the blend of nature, man, and culture necessary for resources to exist, it is one of the more important "machines" which must be present before resources come into being.

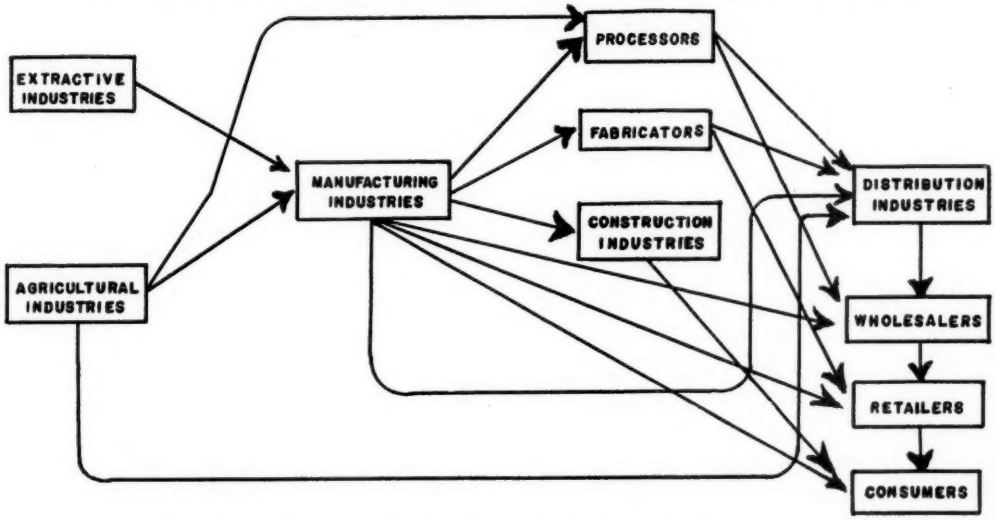
Many people are discussing the great wealth of the Canadian wilderness, and assuredly raw materials abound there in great supply. Until sufficient tools and skills are available in those areas, and until a transportation network has been hacked into the frozen landscape and is a "going concern", however, it is misleading and incorrect to consider such natural stores as resources. To illustrate this point with still another example, before the coming of irrigation and railroad lines into the Rio Grande River region, this area was desolate and economically worthless—probably a resistance to man instead of a resource. But with refrigerated cars and fast freight service available, the Rio Grande Valley has become a great producer of citrus fruits, wheat, and vegetables.

The contribution of transportation to a highly industrialized economy also can be seen by examining briefly the character and structure of such an economy and the place of transport within it. All industries, along with such seemingly diverse units as farms, households, and retail stores, are organized into an integrated mechanism or process for production and consumption of goods and services. The chart depicted below indicates the various categories of economic activity, such as agriculture, manufacturing, construction, wholesale and retail trade, which together make up the physical structure of the economic order. Each part of the over-

[6]Note the "welcome breakfasts" of the Atlanta Chamber of Commerce for new arrivals to the city.

[7]Dr. Erich Zimmermann, Professor of Economics and Resources, University of Texas, in his book, *World Resources and Industries* (Harper and Brothers, New York, 1952) states and substantiates this "functional" approach to resources.

The Function of Transportation in the Distribution of Goods



Source: G. Lloyd Wilson, *The Elements of Transportation Economics*, Simmons-Boardman Publishing Corp., New York, 1950, p. 128. Reproduced by courtesy of the publishers.

Note: The diagram to be more complete should also indicate lines of transport between the consumer block and all other units, for consumers are also the employers and employees carrying on the work of each organization.

all organization receives its supplies, labor, and equipment from other units, and in turn transfers its output to segments which make up still further phases of the process. Interdependence, then, and not self-sufficiency, is a primary characteristic of modern industrial environment.

One requisite for the life-process of society is a constant and regular flow of goods between the pieces of the system. A cessation or irregularity in the flow of goods from such a relatively small unit as a ball-bearing factory, for example, may be felt by the companies furnishing it steel, railroads shipping the raw and finished materials, factories producing machines using the bearing, and perhaps by households of many industrial and transportation workers. Reserves of goods do not exist in the economy in sufficient amount to allow for long stoppages, the result being that halts in the system quickly lead to chaos and decline in output throughout much of industry. Very probably, part of the disinclination of the American community to tolerate employee or employer strikes in such fields as railroads and steel reflects an awareness that such industrial disorders may spread their effects to the entire country.

But what meaning does all this have concerning the importance of transportation? Life, as we know it, would cease to exist without the connective lines of transportation linking the nation into a production mechanism. A large city is quickly placed in dire straits, for example, if its mass transportation facilities stop running. Perhaps for a short period people may form car pools, ride taxis, or walk to work, but a long stoppage could lead to an exodus of industry and business to other localities. Military experts are well aware of the strategic character of transportation in a war machine, for transport facilities rank high, if not first, in the priority of bombing targets. In World War II, during September, 1944, the Supreme Allied Command broadcast to the Netherlands a request for civilian aid in hampering the German armies. Within the next few days the railroad workers of that nation simply stopped working, restricting the movement of materials and men, and helping to bring the war to a more rapid end. Even today, agriculture, an activity which formerly was self-sufficient and local, feels the necessity for modern, rapid transportation. Machine breakdowns during harvest seasons require quick procurement of replacement parts; prompt veterinarian service is important in many instances; and today farmers must keep in constant touch with markets for the orderly distribution of goods.

Thus transportation shows again its vital role in our present industrial civilization. After the discussion which has been presented it seems evident, at least to the writer, that transportation men, women, and investment should have much prestige; as stated at the outset, twentieth-century United States could not get along without them.